

REMARKS

In response to the non-final Office Action dated January 7, 2008, applicant submits the following amendments and remarks.

Claims 1, 3-17 and 19-54 are pending. Claims 40-54 are new. Reconsideration and allowance of the above-referenced application are respectfully requested in light of the following remarks.

Examiner Interview

As a preliminary matter, Applicant thanks the Examiner's Supervisor for participating in a telephone interview with the Applicant's representative on January 30th, 2008. During that interview, the Examiner's Supervisor agreed that the Takahashi patent is not understood to disclose a substantially connected component that includes "non-edge pixels" as recited in pending independent claims 1, 17 or 33. In addition, the Examiner's Supervisor agreed that the claim rejections would be withdrawn upon receipt of Applicant's written response to the Office action.

Claim Rejections

In the non-final Office action of January 7, 2008, the Examiner rejected the claims as follows:

- (1) Claims 1, 3-7, and 10 are rejected for allegedly being anticipated by Takahashi (US 6,665,439).
- (2) Claims 8, 11-13 are rejected for allegedly being unpatentable over Takahashi in view of Huang et al (US Patent No. 5,671,290).
- (3) Claims 14 and 16 are rejected for allegedly being unpatentable over Takahashi in view of Huang et al and further in view of Noda et al (Pub No. US2002/0030634).

(4) Claim 15 is rejected for allegedly being unpatentable over Takahashi in view of Huang et al and further in view of Curtright et al (Patent No. 5,844,570).

(5) Claims 9, 17, 19-33 are rejected for allegedly being unpatentable over Takahashi in view of Prakash et al (US Patent No. 6,778,698).

(6) Claims 34, 36 and 38 are rejected for allegedly being unpatentable over Takahashi in view of Tessadro (U.S. Patent No. 7,003,161).

(7) Claims 35, 37 and 39 are rejected for allegedly being unpatentable over Takahashi in view of Acharaya et al. (U.S. Patent No. 6,094,508).

In view of the following remarks, Applicant respectfully requests reconsideration and withdrawal of the claim rejections.

Claims 1, 3-16 and 34-35 are patentable over the cited references

Claim 1 recites, in part, a computer-implemented method for identifying one or more objects within an image that includes:

identifying a substantially connected component that includes non-edge pixels and a plurality of substantially connected edge pixels being substantially connected to the selected edge pixel, wherein the number of non-edge pixels in the substantially connected component is based on a level of tolerance for non-edge pixels;

This limitation is supported in the present application, for example, at page 8, line 2 to page 9, line 6 and in FIG. 5B. As shown in that example, a substantially connected component 510 in an image 300 includes a set of edge pixels and a portion 410 of the edge pixel map that is surrounded by non-edge pixels. The substantially connected component 510 is computed using a traversal algorithm that has a certain level of tolerance for non-edge pixels. The tolerance level can be set according to a user input or automatically as a function of spacing between objects.

The cited reference is not understood to teach this limitation. In particular, the Applicant directs the Examiner to col. 15, lines 48-67 of the Takahashi patent which discloses that if the edge strength of an object pixel 202 exceeds an edge threshold value t , then it is judged that the

pixel 202 is "located on an actual edge." Furthermore, the Takahashi patent discloses that edges are formed as "continuous line[s]" in which "any breaks in the continuity of the edge" are eliminated (*see* col. 18, lines 50-52, 56-58). Indeed, there is no disclosure in the Takahashi patent of identifying a substantially connected component that includes "non-edge pixels" as recited in pending claim 1.

In addition, none of the cited references, alone or in combination, are understood to disclose or render obvious the subject matter of pending claim 1.

The Huang et al. patent discloses a face recognition system that includes locating and extracting face regions belonging to known people from a set of model images, and determining the face pose for each of the face regions extracted (*see* Abstract). However, the Huang et al. patent is not understood to disclose the features of pending claim 1 that are missing from the Takahashi patent.

The Noda et al. reference discloses an image synthesizing apparatus for producing a synthetic image that consists of a background image and at least a main image superimposed on the background image (*see* Abstract). However, the Noda et al. reference is not understood to disclose the features missing from the Takahashi patent.

The Curtright et al. patent discloses a computer-implemented method for generating digital map images of a uniform format that includes: cropping a bit mapped map image corresponding to a desired geographic area; moving the boundaries of the selected map image into a tessellated shape and then re-sizing the map image to contain a predetermined pixel area (*see* Abstract). The Curtright et al. patent is not understood to disclose the features missing from the Takahashi patent.

The Prakash et al. patent discloses a technique to segment an image that includes a multi-scale segmentation process operating on an image and a set of edge chains. Although the Prakash et al. patent discloses the use of an edge chain, the Prakash et al. patent is not understood to disclose that the edge chain is a "substantially connected component that includes non-edge pixels" in which the number of non-edge pixels is based on a level of tolerance. Instead, the

Prakash et al. patent discloses that the edge chain are generated from linked edge pixels (*see* col. 9, line 57 – col. 10, line 8).

The Tessadro patent discloses a method to detect and locate an edge based on characteristics of the image, such as texture, intensity and color. However, the Tessadro patent is not understood to disclose the features missing from the Takahashi patent.

The Acharya et al. patent discloses a method for determining a threshold for edge detection based on local intensity information. However, the Acharya et al. patent is not understood to disclose the features missing from the Takahashi patent.

At least for the foregoing reasons, claim 1 should be allowed.

Claims 3-16 and 34-35 depend from claim 1 and should be allowed for at least the same reasons as claim 1.

Claims 17, 19-33 and 36-39 are patentable over the cited references

Claim 17 recites a computer program product, tangibly stored on a computer-readable medium, for identifying one or more objects within an image, that includes instructions for identifying a “substantially connected component that includes non-edge pixels” in which the number of non-edge pixels in the substantially connected component is based on a “level of tolerance for non-edge pixels.”

None of the cited references, alone or in combination, disclose or render obvious the subject matter of independent claim 17. As set forth in reference to claim 1, the cited references are not understood to disclose or suggest a “substantially connected component that includes non-edge pixels” in which the number of non-edge pixels in the substantially connected component is based on a “level of tolerance for non-edge pixels.”

Accordingly, claim 17 should be allowed. Claims 19-32 and 36-37 depend from claim 17 and should be allowed for at least the same reasons as claim 17.

Claim 33 recites a computer program product, tangibly stored on a computer-readable medium, for identifying multiple objects within a scanned image, that includes instructions for identifying a “substantially connected component” in which the substantially connected

component is a set of edge pixels that are substantially connected by traversing adjacent edge pixels and "adjacent non-edge pixels." The number of non-edge pixels in the substantially connected component is "based on a level of tolerance for non-edge pixels."

None of the cited references, alone or in combination, are understood to disclose or render obvious the subject matter of independent claim 33. There is no disclosure or suggestion in the cited references of a "substantially connected component" in which the number of non-edge pixels in the substantially connected component is based on a "level of tolerance for non-edge pixels."

At least for the foregoing reason, claim 33 should be allowed.

Claims 38-39 depend from claim 33 and should be allowed for at least the same reason as claim 33.

New independent claim 40 recites, in part, a system having a processor operable to perform operations including "identifying a substantially connected component" that has "non-edge pixels" and "edge pixels," in which the number of non-edge pixels in the substantially connected component is based on a level of tolerance for non-edge pixels.

None of the cited references, alone or in combination, are understood to disclose or render obvious the subject matter of independent claim 40. There is no disclosure or suggestion in the cited references of a processor "identifying a substantially connected component" that has "non-edge pixels" and "edge pixels" in which the number of non-edge pixels in the substantially connected component is based on a level of tolerance for non-edge pixels.

At least for the foregoing reason, claim 40 should be allowed.

Claims 41-54 depend from claim 40 and should be allowed for at least the same reason as claim 40.

Conclusion

By responding in the foregoing remarks only to particular positions taken by the examiner, the Applicant does not acquiesce with other positions that have not been explicitly

addressed. In addition, the Applicant's arguments for the patentability of a claim should not be understood as implying that no other reasons for the patentability of that claim exist.

The Applicant respectfully requests that all pending claims be allowed. Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

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